

Patent Claims

- 1 1. Method for authenticating a first object to at least one further object, in
2 particular a vehicle to a key, comprising the steps of:
3 a) transmitting an item of information unidirectionally between the first object
4 and the at least one further object,
5 b) calculating a computation result in the relevant receiving object from parts
6 of the transmitted information,
7 c) comparing the calculated computation result with a computation result
8 transferred with the information, and
9 d) if there is a match authenticating the vehicle, declaring the computation
10 result as invalid for further transmissions.
- 1 2. Method in accordance with Claim 1, wherein the information is sent from a
2 vehicle as a first object and received by a key as at least one further object.
- 1 3. Method in accordance with Claim 1, wherein as parts of the information, a
2 random number and an incremental or decrementable item of data which is
3 stored in at least one further object if it matches the computation result, is
4 transferred, and after each transmission of the information, regardless of a
5 successful receipt, the item of data is incremented or decremented before new
6 information is sent.
- 1 4. Method in accordance with Claim 2, wherein as parts of the information, a
2 random number and an incremental or decrementable item of data which is
3 stored in at least one further object if it matches the computation result, is
4 transferred, and that after each transmission of the information, regardless of a
5 successful receipt, the item of data is incremented or decremented before new
6 information is sent.
- 1 5. Method in accordance with Claim 1, wherein a counter state or item of time data
2 is transferred as the item of data that can be incremented.

- 1 6. Method in accordance with Claim 2, wherein a counter state or item of time data
2 is transferred as the item of data that can be incremented.
- 1 7. Method in accordance with Claim 5, wherein the result is only calculated when
2 the transferred item of data is greater than the stored item of data.
- 1 8. Method in accordance with Claim 5, wherein when the transferred result and the
2 calculated result match, the incrementable item of data is increased so that the
3 transferred result becomes invalid.
- 1 9. Method in accordance with Claim 7, wherein when the transferred result and the
2 calculated result match, the incrementable item of data is increased so that the
3 transferred result becomes invalid.
- 1 10. Method in accordance with Claim 1, wherein the result is computed in at least
2 one further object using a cryptological computation algorithm known there and
3 a code word.

- 1 11. Method for authenticating a vehicle to at a key comprising the steps of:
 - 2 a) transmitting an item of information unidirectionally between the vehicle and
 - 3 the key,
 - 4 b) calculating a computation result in the key from parts of the transmitted
 - 5 information,
 - 6 c) comparing the calculated computation result with a computation result
 - 7 transferred with the information, and
 - 8 d) if there is a match authenticating the vehicle, declaring the computation
 - 9 result as invalid for further transmissions.
- 1 12. Method in accordance with Claim 11, wherein as parts of the information, a
- 2 random number and an incremental or decrementable item of data which is
- 3 stored in the key if it matches the computation result, is transferred, and after
- 4 each transmission of the information, regardless of a successful receipt, the item
- 5 of data is incremented or decremented before new information is sent.
- 1 13. Method in accordance with Claim 11, wherein a counter state or item of time
- 2 data is transferred as the item of data that can be incremented.
- 1 14. Method in accordance with Claim 13, wherein the result is only calculated when
- 2 the transferred item of data is greater than the stored item of data.
- 1 15. Method in accordance with Claim 13, wherein when the transferred result and
- 2 the calculated result match, the incrementable item of data is increased so that
- 3 the transferred result becomes invalid.
- 1 16. Method in accordance with Claim 14, wherein when the transferred result and
- 2 the calculated result match, the incrementable item of data is increased so that
- 3 the transferred result becomes invalid.
- 1 17. Method in accordance with Claim 11, wherein the result is computed in the key
- 2 using a cryptological computation algorithm known there and a code word.